

## ACOUSTIC ABSORPTION SUMMARY SOLIMIDE® AC-550 FOAM

SOLIMIDE® foam measured per ASTM C 423 and E 975 with Type A Mounting, tests completed at Riverbank Laboratories – Random Incidence Testing in the United States.

### SOUND ABSORPTION COEFFICIENTS

Measurement Frequency (Hz)	1 inch SOLIMIDE AC-550 Foam	1 inch SOLIMIDE AC-550 Foam	1 inch SOLIMIDE AC-550 Foam	2 inch SOLIMIDE AC-550 Foam
BUN #	S10703A	S10703A	S08196G	S08196G
DENSITY	0.46 pcf	0.46 pcf	0.52 pcf	0.48 pcf
NRC	0.60	0.65	0.70	0.90
Flexed	No	Light	Yes, Full	Yes, Full
100	0.17	0.20	0.08	0.23
125	0.15	0.19	0.09	0.34
160	0.15	0.18	0.08	0.33
200	0.20	0.22	0.11	0.47
250	0.21	0.24	0.18	0.63
315	0.31	0.36	0.29	0.80
400	0.33	0.40	0.37	0.99
500	0.41	0.56	0.60	1.09
630	0.47	0.64	0.76	1.13
800	0.58	0.78	0.97	1.11
1000	0.67	0.85	1.07	1.03
1250	0.79	0.94	1.12	1.01
1600	0.98	1.05	1.08	0.96
2000	1.02	1.02	1.03	0.91
2500	0.80	0.86	0.99	0.94
3150	0.78	0.85	0.96	0.98
4000	0.79	0.81	0.96	0.99
5000	0.79	0.79	0.98	1.01

#### Consideration:

- AC-550 with 'Light Flexing' (middle column of data) has highest absorption coefficients from 100 Hz to 2500 Hz of the five data sets listed above. This frequency range of high absorption may benefit a frequency range of interest for sound reduction on the Space Station program.
- The 'Light Flexing' of AC-550 polyimide foam is typically achieved with one rapid pass through cold rolling equipment. This process softens the foam, hence the terminology of 'Flexed' foam. Generally speaking, this softening process improves overall acoustic absorption as noted by the Noise Reduction Coefficient (NRC) value.

### Inspec Foams CONFIDENTIAL INFORMATION

## ACOUSTIC ABSORPTION SUMMARY SOLIMIDE® AC-530 FOAM

SOLIMIDE® foam measured per ASTM C 423 and E 975 with Type A Mounting, tests completed at Riverbank Laboratories – Random Incidence Testing in the United States.

### SOUND ABSORPTION COEFFICIENTS

Measurement Frequency (Hz)	1 inch SOLIMIDE AC-530 Foam	1 inch SOLIMIDE AC-530 Foam	1 inch SOLIMIDE AC-530 Foam
BUN #	S10823B	S10703A	S10823B
DENSITY	0.37 pcf	0.37 pcf	0.37 pcf
NRC	0.60	0.70	0.70
Flexed	No	Light	Yes, Full
100	0.18	0.18	0.10
125	0.12	0.13	0.08
160	0.12	0.17	0.09
200	0.17	0.19	0.12
250	0.22	0.22	0.16
315	0.30	0.35	0.26
400	0.33	0.42	0.33
500	0.40	0.58	0.53
630	0.47	0.68	0.68
800	0.59	0.82	0.86
1000	0.67	0.88	0.99
1250	0.79	0.98	1.04
1600	0.93	1.04	1.08
2000	1.04	1.05	1.04
2500	0.85	0.93	0.96
3150	0.79	0.90	0.89
4000	0.81	0.83	0.86
5000	0.78	0.88	0.91

#### Consideration:

- As with the AC-550 foam results, AC-530 foam with ‘Light Flexing’ (middle column of AC-530 foam data) has highest absorption coefficients from 100 Hz to 2500 Hz of the three data sets listed above. This frequency range of high absorption may benefit a frequency range of interest for sound reduction on the Space Station program.
- The ‘Light Flexing’ of AC-530 polyimide foam is typically achieved with one rapid pass through cold rolling equipment. This process softens the foam, hence the terminology of ‘Flexed’ foam. Generally speaking, this softening process improves overall acoustic absorption as noted by the Noise Reduction Coefficient (NRC) value.
- Comparison of AC-530 foam (Light Flex) to AC-550 foam (Light Flex) shows the AC-530 to have higher acoustic absorption coefficients from 400 to 5000 Hz. At 315 Hz and lower frequency, the AC-530 foam acoustic coefficient is similar to or slightly inferior of AC-550 foam.

### Inspec Foams CONFIDENTIAL INFORMATION